

SEQUENCE LISTING

Sequence Listing.txt

<110> THE HOSPITAL FOR SICK CHILDREN

<120> DIAGNOSIS OF SHWACHMAN-DIAMOND SYNDROME

<130> 3206-263/PAR

<140> PCT/CA03/01320

<141> 2003-08-29

<150> 60/406,950

<151> 2002-08-30

<160> 50

<170> PatentIn version 3.1

<210> 1

<211> 1604

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<223> human SBDS

<220>

<221> CDS

<222> (185)..(934)

<223>

## Sequence Listing.txt

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| <400>  | 1   |            |            |            |            |     |
| gtaagttaagc  | ctgccagaca  | cactgtgacg | gctgcctgaa | gctagtgagt | cgcggcgccg | 60  |
| cgcactggtg   | gttgggtcaag   | tgccgcgcgc | cgatcggtcg | ttaccgcgag | gcgctggtgg | 120 |
| ccttcaggct   | ggacggcgcg  | ggtcagccct | ggttcgccgg | cttctgggtc | tttgaacagc | 180 |
| cgcg atg tcg atc ttc acc ccc acc aac cag atc cgc cta acc aat gtg | Met Ser Ile Phe Thr Pro Thr Asn Gln Ile Arg Leu Thr Asn Val     |            |            |            |            | 229 |
| 1  | 5   | 10         |            |            | 15         |     |
| gcc gtt gta cgg atg aag cgt gcc ggg aag cgc ttc gaa atc gcc tgc  | Ala Val Val Arg Met Lys Arg Ala Gly Lys Arg Phe Glu Ile Ala Cys |            |            |            |            | 277 |
| 20   | 25  |            |            |            | 30         |     |
| tac aaa aac aag gtc gtc ggc tgg cgg agc ggc gtg gaa aaa gac ctc  | Tyr Lys Asn Lys Val Val Gly Trp Arg Ser Gly Val Glu Lys Asp Leu |            |            |            |            | 325 |
| 35   | 40  |            |            |            | 45         |     |
| gat gaa gtt ctg cag acc cac tca gtg ttt gta aat gtt tct aaa ggt  | Asp Glu Val Leu Gln Thr His Ser Val Phe Val Asn Val Ser Lys Gly |            |            |            |            | 373 |
| 50   | 55  |            |            |            | 60         |     |
| cag gtt gcc aaa aag gaa gat ctc atc agt gcg ttt gga aca gat gac  | Gln Val Ala Lys Lys Glu Asp Leu Ile Ser Ala Phe Gly Thr Asp Asp |            |            |            |            | 421 |
| 65   | 70  |            |            |            | 75         |     |
| caa act gaa atc tgt aag cag att ttg act aaa gga gaa gtt caa gta  | Gln Thr Glu Ile Cys Lys Gln Ile Leu Thr Lys Gly Glu Val Gln Val |            |            |            |            | 469 |
| 80   | 85  |            |            |            | 90         |     |
| 95   |   |            |            |            |            |     |
| tca gat aaa gaa aga cac aca caa ctg gag cag atg ttt agg gac att  | Ser Asp Lys Glu Arg His Thr Gln Leu Glu Gln Met Phe Arg Asp Ile |            |            |            |            | 517 |
| 100  | 105   |            |            |            | 110        |     |
| gca act att gtg gca gac aaa tgt gtg aat cct gaa aca aag aga cca  | Ala Thr Ile Val Ala Asp Lys Cys Val Asn Pro Glu Thr Lys Arg Pro |            |            |            |            | 565 |
| 115  | 120   |            |            |            | 125        |     |
| tac acc gtg atc ctt att gag aga gcc atg aag gac atc cac tat tcg  | Tyr Thr Val Ile Leu Ile Glu Arg Ala Met Lys Asp Ile His Tyr Ser |            |            |            |            | 613 |
| 130  | 135   |            |            |            | 140        |     |
| gtg aaa acc aac aag agt aca aaa cag cag gct ttg gaa gtg ata aag  | Val Lys Thr Asn Lys Ser Thr Lys Gln Gln Ala Leu Glu Val Ile Lys |            |            |            |            | 661 |
| 145  | 150   |            |            |            | 155        |     |
| cag tta aaa gag aaa atg aag ata gaa cgt gct cac atg agg ctt cgg  | Gln Leu Lys Glu Lys Met Lys Ile Glu Arg Ala His Met Arg Leu Arg |            |            |            |            | 709 |
| 160  | 165   |            |            |            | 170        |     |
| 175  |   |            |            |            |            |     |
| ttc atc ctt cca gtc aat gaa ggc aag aag ctg aaa gaa aag ctc aag  | Phe Ile Leu Pro Val Asn Glu Gly Lys Lys Leu Lys Glu Lys Leu Lys |            |            |            |            | 757 |
| 180  | 185   |            |            |            | 190        |     |
| cca ctg atc aag gtc ata gaa agt gaa gat tat ggc caa cag tta gaa  | Pro Leu Ile Lys Val Ile Glu Ser Glu Asp Tyr Gly Gln Gln Leu Glu |            |            |            |            | 805 |
| 195  | 200   |            |            |            | 205        |     |
| atc gta tgt ctg att gac ccg ggc tgc ttc cga gaa att gat gag cta  | Ile Val Cys Leu Ile Asp Pro Glu Cys Phe Arg Glu Ile Asp Glu Leu |            |            |            |            | 853 |
| 210  | 215   |            |            |            | 220        |     |

Sequence Listing.txt

|   |  |
|---|--|
| ata aaa aag gaa act aaa ggc aaa ggt tct ttg gaa gta ctc aat ctg<br>Ile Lys Lys Glu Thr Lys Gly Lys Ser Leu Glu Val Leu Asn Leu<br>225 230 235   | 901  |
| aaa gat gta gaa gaa gga gat gag aaa ttt gaa tgacacccat caatctttc<br>Lys Asp Val Glu Glu Gly Asp Glu Lys Phe Glu<br>240 245 250  | 954  |
| acctctaaaa cactaaagtg tttccgttcc cgacggcaact gtttcatgtc tgtggtctgc<br>caaatacttg cttaaactat ttgacatttt ctactttgtg ttaacagtgg acacagcaag<br>gtttcctac ataagtataa taatgtgggaa atgatttggt ttaattata aactgggtc<br>taaatcctaa agcaaaattt aaactccaag atgcaaagtc cagagtggca ttttgctact<br>ctgtctcatg ctttgatagc tttccaaaat gaaagttact tgaggcagct cttgtgggtg<br>aaaagttatt tgtacagttag agtaagatta ttaggggtat gtctatacaa caaaaggggg<br>ggtcttcct aaaaaagaaa acatatgtg cttcattttt acttaatggaa acttgtgttc<br>tgagggtcat tatgttatcg taatgtaaag cttggatgat gttcctgatt atctgagaaa<br>cagatataga aaaattgtgc cggacttacc tttcattgaa catgctgccaa taacttagat<br>tattcttggt taaaaaataa aagtcaactt tttctaattc ttaaagttta taatatatat<br>taatatactt aaaaattgtat gtaatcaata aaaccactct tatgtttatt | 1014<br>1074<br>1134<br>1194<br>1254<br>1314<br>1374<br>1434<br>1494<br>1554<br>1604 |

<210> 2

<211> 250

<212> PRT

<213> Homo sapiens

<220>

<221> misc\_feature

<223> human SBDS

<400> 2

|  |
|--|
| Met Ser Ile Phe Thr Pro Thr Asn Gln Ile Arg Leu Thr Asn Val Ala<br>1 5 10 15 |
|--|

|   |
|---|
| Val Val Arg Met Lys Arg Ala Gly Lys Arg Phe Glu Ile Ala Cys Tyr<br>20 25 30 |
|---|

|   |
|---|
| Lys Asn Lys Val Val Gly Trp Arg Ser Gly Val Glu Lys Asp Leu Asp<br>35 40 45 |
|---|

|   |
|---|
| Glu Val Leu Gln Thr His Ser Val Phe Val Asn Val Ser Lys Gly Gln<br>Page 3 |
|---|

## Sequence Listing.txt

50

55

60

Val Ala Lys Lys Glu Asp Leu Ile Ser Ala Phe Gly Thr Asp Asp Gln  
65 70 75 80

Thr Glu Ile Cys Lys Gln Ile Leu Thr Lys Gly Glu Val Gln Val Ser  
85 90 95

Asp Lys Glu Arg His Thr Gln Leu Glu Gln Met Phe Arg Asp Ile Ala  
100 105 110

Thr Ile Val Ala Asp Lys Cys Val Asn Pro Glu Thr Lys Arg Pro Tyr  
115 120 125

Thr Val Ile Leu Ile Glu Arg Ala Met Lys Asp Ile His Tyr Ser Val  
130 135 140

Lys Thr Asn Lys Ser Thr Lys Gln Gln Ala Leu Glu Val Ile Lys Gln  
145 150 155 160

Leu Lys Glu Lys Met Lys Ile Glu Arg Ala His Met Arg Leu Arg Phe  
165 170 175

Ile Leu Pro Val Asn Glu Gly Lys Lys Leu Lys Glu Lys Leu Lys Pro  
180 185 190

Leu Ile Lys Val Ile Glu Ser Glu Asp Tyr Gly Gln Gln Leu Glu Ile  
195 200 205

Val Cys Leu Ile Asp Pro Gly Cys Phe Arg Glu Ile Asp Glu Leu Ile  
210 215 220

Lys Lys Glu Thr Lys Gly Lys Gly Ser Leu Glu Val Leu Asn Leu Lys  
225 230 235 240

Asp Val Glu Glu Gly Asp Glu Lys Phe Glu  
245 250

<210> 3

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

Sequence Listing.txt

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<223> primer

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25

<210> 5

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 5

ggggatttgt tgtgtcttg

19

<210> 6

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 6

ctttcctcca gaaaaacagc

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<210> 7

<211> 20

Sequence Listing.txt

<212> DNA

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<223> primer

<400> 7

aaatgtaag gcaaatacg

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<210> 8

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 8

accaagttct ttattattag aagtgac

27

<210> 9

<211> 25

<212> DNA

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<220>

<223> primer

<400> 9

gctcaaacca ttacttacat attga

25

<210> 10

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

Sequence Listing.txt

<223> primer

<400> 10

cacttgcttc catgcaga

18

<210> 11

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 11

aaagggtcat tttaaacatt c

21

<210> 12

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 12

gaaaatatct gacgtttaca aca

23

<210> 13

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 13

tccactgttag atgtgaacta actc

24

<210> 14

<211> 20

Sequence Listing.txt

<212> DNA

<213> Artificial Sequence

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<223> primer

<400> 14

cactctggac tttgcacatctt

20

<210> 15

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 15

gcttccttgctc cacctgac

18

<210> 16

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 16

agctatgtcg cagctgttac

20

<210> 17

<211> 20

<212> DNA

<213> Artificial Sequence

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Sequence Listing.txt

<223> primer

<400> 17

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20

<210> 18

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 18

tccatggcta tattttgatg a

21

<210> 19

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 19

taagcctgcc agacacac

18

<210> 20

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 20

cactctggac ttgcacatctt

20

<210> 21

<211> 19

Sequence Listing.txt

<212> DNA

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<223> primer

<400> 21

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19

<210> 22

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 22

agataaagaa agacacacac aact

24

<210> 23

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 23

gaaatcgcct gctacaaa

18

<210> 24

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

Sequence Listing.txt

<223> primer

<400> 24

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18

<210> 25

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 25

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19

<210> 26

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> primer

<400> 26

catcaaggtc ttttccaag

20

<210> 27

<211> 18

<212> DNA

<213> Artificial Sequence

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<223> primer

<400> 27

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18

<210> 28

<211> 21

Sequence Listing.txt

<212> DNA

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<220>

<223> primer

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21

<210> 29

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> peptide

<400> 29

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<210> 30

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> peptide

<400> 30

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1 5 10 15

<210> 31

<211> 20

<212> DNA

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Sequence Listing.txt

<220>

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20

<210> 32

<211> 19

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<213> Artificial sequence

<220>

<223> primer

<400> 32  
gcttgccctca aaggaagt

19

<210> 33

<211> 19

<212> DNA

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<220>

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cagccgacga ccttgaaaa

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<210> 34

<211> 18

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<213> Artificial sequence

<220>

<223> primer

<400> 34  
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18

Sequence Listing.txt

<210> 35

<211> 719

<212> DNA

<213> Homo sapiens

<400> 35

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cacctgacgc ctgcgcagta agtaagcctg ccagacacac tgtgacggct gcctgaagct 120  
agtgagtcgc ggcgccgcgc actggtggtt gggtcagtgc cgccgcgcga tcggtcgtta 180  
ccgcgaggcg ctggtggcct tcaggctgga cggcgcgggt cagccctggc tcgcccggctt 240  
ctgggtcttt gaacagccgc gatgtcgatc ttccacccca ccaaccagat ccgcctaacc 300  
aatgtggccg tggtagccgat gaagcgtgcc gggaaagcgct tcgaaaatcgc ctgctacaaa 360  
aacaaggtcg tcggctggcg gagcggcgtg tgagtagccc cctccctcgg gcctgggcct 420  
gggcctgagc cgtcacccccc gaggcggcct gtctctgccc aagtcgagtg aatggggccag 480  
gctgggtgt tggccgggaa ggaaatggaa cattcctgct gtgagcatga gacgtcgctg 540  
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ttgggtttggg gttttgtttt gttgggtgtca taaaagctgc agccaagaaa tctcgtaatt 660  
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<211> 733

<212> DNA

<213> Homo sapiens

<400> 36

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aaaataaaaaa gttagccggg tgtggtggcg catgcctgta atcccagttt ctcaggaggc 180  
tgaggcggga gaatcacttgc aacccgggag gctgaggtta cagtgaccccg agatcgcgcc 240  
attgcactcc agcctggca aaaacagtga aattccatct aggggcgggg gttgggggggt 300  
aagaaaaaaga aaactgcctt ctacactaaa ggtcatcagg gggattttgtt gtgtcttgcc 360  
gttcatgttgc ttgccatctc gtatttaat gtaaaatgcgt gtccaaagggtt caagtatatt 420  
cacataggac tttctctcctt gcctcacaag gggaaaaaaga cctcgatgaa gttctgcaga 480

Sequence Listing.txt

|  |     |
|--|-----|
| cccaactcagt gtttgtaaat gtttctaaag gtcaggttgc caaaaaggaa gatctcatca | 540 |
| gtgcgttgg aacagatgac caaactgaaa tctgtaagca ggtgggtaac agctgcagca   | 600 |
| tagctaacc c taataaccat ttataacgta ttttagata tattaaacat taaaggctgt  | 660 |
| ttttctggag gaaagactaa ccaagcaata atgtgaactg cacagtgtca cttctaataa  | 720 |
| taaagaacctt ggt  | 733 |

<210> 37

<211> 899

<212> DNA

<213> Homo sapiens

<400> 37

|   |     |
|---|-----|
| gctcaaacc a ttacttacat attgatagct ggagaggatg aaatttaatt ttctctccat  | 60  |
| ccagttactc attttttatg gttagttaat aaatagtgtg tgatagagaa agatagtgtat  | 120 |
| ttcttaaatg tggcatt ttttagatt ttgactaaag gagaagttca agtacatcgat      | 180 |
| aaagaaaagac acacacaact ggagcagatg ttttagggaca ttgcaactat tgtggcagac | 240 |
| aaatgtgtga atcctgaaac aaagagacca tacaccgtga tccttattga gagagccatg   | 300 |
| aaggacatcc actattcggt gaaaaccaac aagagtacaa aacagcaggt gagtggttgc   | 360 |
| tcatgtcatc aaaatatagc catggaaatc agtttctct gaagaaatca taaaataat     | 420 |
| gggtctgggg ccaggcacaa tggttcatgc ctgtaatcct agcactttgg gagccaagat   | 480 |
| gggaggattt gttgaggcct ggaaacagcc tggaaacat agggacgccc catctctaaa    | 540 |
| ttttttttt ttttttttga gacagagtct tactctattt cccaggctgg agtgcagtag    | 600 |
| tatgatctcg gtcactaca atctccaccc cccgcgttca agcaagtctc ctgcctcagc    | 660 |
| ctcctgagta gctgggatta taggcacgtg ccaccacact cagctaattt tgtatTTTA    | 720 |
| gttagagttga gtttccacca tggccag gctggtctt aactcctgac ccttaggtgat     | 780 |
| ccgtccgcct tggcctcccc aagtgctggg attacaggca tcagctaccg taccctaccc   | 840 |
| ctaaatTTTT taatataaaa aattaaattt aaaaaatgg gtctgcattt aagcaagtgg    | 899 |

<210> 38

<211> 1488

<212> DNA

<213> Homo sapiens

Sequence Listing.txt

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ttccctgcta cctgggtcga gaacatTTTC atcaccacAA aaagaaaAGTC agtatccATT 180  
agtagccatC ccccatttC cccccacagg CCCCTCCAA ccactaatCT cctctcgTTA 240  
tggacttCTC aattctggAC atttcatATA aatggaatCA tacaatatGT ggcTTTCA 300  
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gcccaactgta cgaaaaAGAAA cacatTTGT tcattcatCT atcagttGAT agacattGGG 420  
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tgttagacata tgTTTcatt tctgtataCC tggtgactAC caaacCTatt tctaaaACAG 540  
ctgcaccatt ttactttACC accatcAGtG tttaagAGtT cagtttCTCC acatcCTCAG 600  
taatacttGT cattgtCTGc ctTTTgatG atggccatCC tggtggtatC ttgtcgtGgt 660  
tttgatttGC atttCttAA tgatgatTTG agcatattTC catgtGCTTA ttggTgcCTC 720  
gtctgtCTTC ttttgagAAA tctctgtCA ggttCTTGC ccacCCCCC CGCCCTCTT 780  
ttgcaaACTC tgCCTCCGG attcaagCAA ttctcCTGCC tcagcCTtT gagtagCTGG 840  
gattacaggC gtgcactACC acacCCGGt aattttCTT ttttGtatt tttagtGGAG 900  
acggggTTtC accatgttGG ccaggctGgt ctcgaattCC tgaccttGtG atgcacCCGC 960  
ctcggcCTCC caaagtGCTG gaattacAGG cgtgagCCAC cacacCTGGC cttcaCTtC 1020  
ttcatagTTT ttgaaACAC aaaagCTTT cttcttgata agtccaattt ttctatTTT 1080  
tttttaacGG tcacttatGT tcttaatGTT atacctaAGA aaccattACC taatCCAact 1140  
acatggaaACAC tactttGTT ttgaaaACCT tatgaaATAA tataGtagAA gaaattGcat 1200  
tctcgatTTT gtcttGGtag gCTTGGAG tgataaAGCA gttaaaAGAG aaaatGAAGA 1260  
tagaacgtGC tcacatcAGG ctTCGGtCA tccttCCAGt caatgaAGGC aagaAGctGA 1320  
aagaaaAGtC caagCCactG atcaaggTCa tagaaAGtGA agattatGGC caacAGttag 1380  
aaatcgtaAG agtcaaataT tttcttGCT tcAtgttAcc taaatattGT attctctAGt 1440  
aataaatttG tagcaaACAT ttagatGtG taaacgtCAG atatttC 1488

<210> 39

<211> 1556

<212> DNA

<213> Homo sapiens

Sequence Listing.txt

|              |             |             |             |             |             |      |
|--------------|-------------|-------------|-------------|-------------|-------------|------|
| <400>        | 39          |             |             |             |             |      |
| tccactgttag  | atgtgaacta  | actcatctga  | cactacttga  | agttctaaaa  | tcttgcaaa   | 60   |
| actgtacaca   | tgggccaggc  | acagtggctc  | gtgcctgtaa  | tcccagcact  | ttgggaggcc  | 120  |
| aaggtgagca   | gataacatgg  | tgaaacccta  | tctctactaa  | aaatacaaaa  | aataagccag  | 180  |
| gtgtgggtgt   | gggtccctgt  | aatcccagtt  | tcttgggagg  | ctgaggcagg  | agaatcactt  | 240  |
| gaacctggga   | gcccggaggct | gcagtggcc   | aagatcacac  | cactgcactc  | tatctcaaaa  | 300  |
| aaaaataaaat  | taacatacac  | atggtgtcta  | cataagtctt  | cacattgctt  | tttctccccc  | 360  |
| atacgtggag   | gtgactttac  | tgagctataa  | aatgtaatgc  | taaattttag  | tatgagaaga  | 420  |
| atcagagttt   | tctagtttgt  | cccttccatt  | tacagctgaa  | gaatcagaat  | aagtgtttaa  | 480  |
| acatagggat   | taatgccttg  | tcacaggggg  | ctacatggac  | acttgagggc  | agaggctaaa  | 540  |
| ctggAACCCA   | gtgtgccGCC  | ctacccattt  | tcttatctat  | tgcaccatag  | aactgtggta  | 600  |
| ttatttagaga  | tctggacagc  | attgtgcttgc | cctcaaagga  | agttaaagct  | gagtttattc  | 660  |
| tgtgtcttgc   | tcatcctcat  | gtggtaatct  | gctacgtttaa | atgtttcagg  | tatgtctgat  | 720  |
| tgaccgggc    | tgcttcccgag | aaattgtga   | gctaataaaa  | aaggaaacta  | aaggcaaaagg | 780  |
| ttcttggaa    | gtactcaatc  | tgaaagatgt  | agaagaagga  | gatgagaaat  | ttgaatgaca  | 840  |
| cccatcaatc   | tcttcacctc  | taaaacacta  | aagtgtttcc  | gtttccgacg  | gcactgtttc  | 900  |
| atgtctgtgg   | tctgccaat   | acttgcttaa  | actatttgac  | attttctatc  | tttgtgttaa  | 960  |
| cagtggacac   | agcaaggctt  | tcctacataa  | gtataataat  | gtgggaatga  | tttggtttta  | 1020 |
| attataaact   | ggggctaaa   | tcctaaagca  | aaattgaaac  | tccaaagatgc | aaagtccaga  | 1080 |
| gtggcatttt   | gctactctgt  | ctcatgcctt  | gatagcttcc  | caaaatgaaa  | gttacttgag  | 1140 |
| gcagctcttgc  | tggtgtaaaa  | gttatttgta  | cagtagagta  | agattattag  | gggtatgtct  | 1200 |
| atacaacaaa   | ggggggggtc  | tttcctaaaa  | aagaaaacat  | atgatgcttc  | atttctactt  | 1260 |
| aatggaaacctt | gtgttcttag  | ggtcattatg  | gtatcgtaat  | gtaaagcttgc | gatgatgttc  | 1320 |
| ctgattatct   | gagaaacaga  | tatagaaaaaa | ttgtgccgga  | cttaccttcc  | attgaacatg  | 1380 |
| ctgccataaac  | tttagattatt | cttggtaaa   | aaataaaaagt | cacttatttc  | taattcttaa  | 1440 |
| agtttataat   | atatattaat  | atagctaaaa  | ttgtatgtaa  | tcaataaaaac | cactctttag  | 1500 |
| tttattaaac   | tatggcttgc  | gtttcttagac | aacttcctaa  | ctccctttct  | tttctc      | 1556 |

<210> 40

<211> 720

<212> DNA

<213> Homo sapiens

Sequence Listing.txt

<400> 40  
gcggtaaaag ccacaatgcg caggcgtcat cgctcaactc tccccctcccg gcttctgctc 60  
cacctgacgc ctgcgcagta agtaaggctg ccagacacgc tgtggcggct gcctgaagct 120  
agttagtcgc ggccgcgcgc acttgtggtt gggtcagtgc cgccgcgcgc tcggtcgtta 180  
ccgcgaggcg ctggtggcct tcaggctgga cggcgcgggt cagccctgggt ttgccggctt 240  
ctgggtcttt gaacagccgc gatgtcgatc ttcaccccca ccaaccagat ccgcctaacc 300  
aatgtggccg tggtagccat gaagcgcgc aggaagcgct tcgaaatcgc ctgctacaga 360  
aacaaggctg tcggctggcg gagcggcttg tgagtagccc cctccctcg 420  
gggcctgagc cgtcacctcc gagggcgcct gtctctgccc aagtcgagtg aatggccag 480  
gctgggtgt ttgtggccc gggagggaaat ggaacattcc tgctgtgagc atgagacg 540  
gctgtccgag ctggcgcct aagccaaggg tttctttatt tggtggttc cgattgggtt 600  
gttggtttgg ggtttgttt tgttgggtc ataaaagctg cagccaagaa atctcataat 660  
tgtggtcctt ttcctagaat aatgtggct gagaacctag tgccatgtactat 720

<210> 41

<211> 722

<212> DNA

<213> Homo sapiens

<400> 41  
aaatggtagg gcaaatacag ttctgagttt tgaaaatgtt ccctcaggcc gatgcgggca 60  
gatcacttga ggccaggagt tcgaggccag cctggccaaat atgaaacacc atctctacta 120  
aaaatacataaa attagccggg tgggtggcg catgcctgtat atcccagctat ctcaggaggc 180  
tgaggcagga gaatcacttg aacccgggag gcggacgttg cagtgagccg agatcgcgc 240  
attgcactcc agcctgggca aaaacagtgtat aattccatct aaggcggggg gggggaaagaa 300  
aactgccctc tacactaaatg gtcatcagggg ggatttgggg tgggtggcg ttcatgttgt 360  
tgccatctcg tatttaaatg taaatgcatttcccaagtttca aagtatattt acataggact 420  
ttctctcctg ccctcacaag ggaaaaagac cttgatgaag ttctgcagac ccactcagtg 480  
tttgtaatg ttccctaagg tcagggttgc aagaaggaag atctcatcag tgcgtttgg 540  
acagatgacc aaactgaaat ctgtaaggcag gcgggttaaca gctgcagcat agctaaccct 600  
aataaccatt tataacgtat ttgttagatattaaacatt aaaggctgtt ttctggagg 660  
aaagactaac caagcaataa tgtgaactgc acaatatcac ttctaaataat aaagaacttg 720  
gt 722

## Sequence Listing.txt

<210> 42

<211> 904

<212> DNA

<213> Homo sapiens

<400> 42 gctcaaacca ttacttacat attaatagct ggagaggatg aaatttaatt ttctccccag 60  
ttactcattt tttgtcgta gttaataaaat agtgtgtat agagaaaat agtgatttct 120  
taactgtgtt ggcattttt tagatttga ctaaaggaga agttcaagta tcagataaaag 180  
acacacacaa ctggagcaga tgtaggga cattgcaatt attgtggcag acaaatgtgt 240  
gactcctgaa acaaagagac catacaccgt gatccttatt gagagagcca tgaaggacat 300  
ccactattt gtgaaaacca acaggagtac aaaacagcag gtgagtggtc tctcatgtca 360  
tcaaaatata gccatggaaa tcagtttct ctgaagaaat cattaaaata atgggtctgg 420  
ggccaggcac aatggttcat acccgtaatc ctgcacttt gggagccaag atgggaggat 480  
tgcttgaggc ctggaaacag cctggaaac atagggacgc cccatctcta aatttttttg 540  
tttattgttg ttttttgtt tgagacagag tcgcactgtg ttgcccgagc tggagtgcag 600  
tggcacgatc tcggctcaact tacaatctcc acctcccgcg ttcaagcaag tctcctgcct 660  
cagcctccca agtagctggg attataggca cgccacca cacccagcta attttgttat 720  
tttttagtaga gttgaggttt taccatgttgc cccaggctgg tcttgaactc ctgacacct 780  
gtgatccgtc cgccctggcc tcccaaagtgc tgggattac aggcatcagc taccgtaccc 840  
tacctctaatttttaata taaaaaattta aattttaaaaa aatgggttttgc catggaagca 900  
agtg 904

<210> 43

<211> 1527

<212> DNA

<213> Homo sapiens

<400> 43

```

aaagggtcat tttaacacct cttttgaat ttttcaattt acatataatt cacataacaat 60
aaatttcaca ctcataaaagt gtgtacactt taagtggtat attaacaagtttgggaacc 120
ttccctgcta cctggtttga gaacattttc atcaccacaa aaaqaaaqtc agtatccatt 180

```

Sequence Listing.txt

|  |      |
|--|------|
| agttagctatc cccccattttc cccccacagg cccttcccaa ccactaatct cctgtcgta | 240  |
| tggacttgc aattctggac atttcatata aatggaatca tacaatatat ggcctttca    | 300  |
| gggttcatac atgttgtaac ctgcatcagc atgtcatttc tttttatgc cggaataata   | 360  |
| gcccaactgta cgaaaaaaa catatttgt tcattcattt atcagttgat agacattggg   | 420  |
| ttgcttcac ttttgagcta tgatgagcaa tgctgctata aaatttcttg tatgttttg    | 480  |
| tgttagacata tattttcatt tctgtatacc tggggactac caaacctatt tctaaaacag | 540  |
| ctgcaccatt ttacattacc accaacagcg ttaagagtt cagtttctcc acatcctcag   | 600  |
| taatacttgt cattgtctgt cttttgatg atggccatcc tggtggtatc ttgtcgctgt   | 660  |
| tttgatttgc atttccttaa taatgatttgc agcatatttc catgtgctta ttgggcctc  | 720  |
| gtctgtctgc ttttgagaaa tctctgtca ggttcttgc cccctttta ttctcgctct     | 780  |
| gtcacccaga ctagagtgca gtggcgcat ctcggctcat tgcaaactct gcctcccgga   | 840  |
| ttcaagcaat tctcctgcct cagcctcttgc agtagctggt actacaggcg tgtgctacca | 900  |
| cacccggctta attttcttt tttgtatTT ttagtagaga cggggttca ccatgttggc    | 960  |
| caggctggtc tcgaatttct gacctgtga tgcacccgcc tcggcctccc aaagtgcgtgg  | 1020 |
| gattagaggc gtgagccacc acacctggcc ttcactttct tcataatTT ttgaaacaca   | 1080 |
| aaagctttc ttcttgataa gtccaatttt tctatTTTT tttaacggtc acttatgttc    | 1140 |
| ttaatgttat acctaagaaa ccattaccta atccaaactac atggaaacta ctttggTTT  | 1200 |
| gaaaacctta tgaaataata tagtagaaga aattgcattc tcgatTTTgt cttggtaggc  | 1260 |
| tttggaaagtg ataaagcagt taaaagagaa aatgaagata gaacgtgctc acatgaggct | 1320 |
| tcagttcattc cttccagtga atgaaggcaa gaagctgaaa gaaaagctca agccactgat | 1380 |
| caaggtcata gaaagtaaag attatggcca acagtttagaa atcgtaagag tcaaataTTT | 1440 |
| tctttgcTTc atgttaccta aatattgtat tctctagtaa taaatTTgt acaaacattc   | 1500 |
| agacattgtat aacagtca aatTTTC                                       | 1527 |

<210> 44

<211> 1553

<212> DNA

<213> Homo sapiens

<400> 44

|  |     |
|--|-----|
| tccactgttag atgtgaacta acccatctga cactacttga agttctaaaa tctttgcAAA   | 60  |
| actgtacacg tggggccaggc acagtggctc atacctgtAA tcccagcact ttgggaggCC   | 120 |
| gaggcggagca gataaacacgg tgaaaccCTG tctctactaa aaataacaaaa aataagccAG | 180 |

Sequence Listing.txt

|              |              |             |             |             |             |    |      |
|--------------|--------------|-------------|-------------|-------------|-------------|----|------|
| gtgtggtgtt   | ggcgcttgtt   | aatcccagt   | tcttggagg   | ccgaggcagg  | agaatca     | tt | 240  |
| gaacctggga   | ggtggaggct   | gcagtgagcc  | aagatcacac  | cactgcactc  | tatctcaaaa  |    | 300  |
| aaaaaaataaaa | acaaaaacat   | acacatggtg  | tctacgtaag  | tcttcacatt  | gcttttctc   |    | 360  |
| cttcatacg    | ggaggtgact   | ttactgagct  | ataaaatgta  | atgctaaatt  | tttagtatgag |    | 420  |
| aagaatcaga   | gttttctagt   | ttgtcccttc  | cattacagc   | ggaagaatca  | gaataagtgt  |    | 480  |
| ttaaacatag   | ggattaatgc   | cttgcacag   | ggggctacat  | ggataactga  | gggcagaggc  |    | 540  |
| tgaactggaa   | cccagtgtgc   | cgcctaccc   | attgtcttat  | ctattgcacc  | atagaactgt  |    | 600  |
| ggtatttagag  | atctggacag   | cattgtgctt  | gcctcaaagt  | taaagctgag  | tttattctgt  |    | 660  |
| gtcttgctca   | tcctcatttgc  | gtaaaactgct | acgttaaatg  | tttcaggtat  | gtctgattga  |    | 720  |
| cctgggctgc   | ttccgagaaa   | ttgatgagct  | aataaaaaaag | gaaaccaaag  | gcaaaggttc  |    | 780  |
| tttggaaagta  | ctcaatctga   | aagatttga   | gaaggagatg  | agaaatttga  | atgacaccca  |    | 840  |
| tcagtccttt   | cacctctaaa   | acactaaagt  | gtttcgttt   | ccaacagcac  | tgtttcatgt  |    | 900  |
| ctgtggtctg   | ccaaataactt  | gctcaaacta  | tttgacattt  | tctatctttg  | tgttaacagt  |    | 960  |
| ggacacagca   | aggcttcct    | acataagtat  | aataatgtgg  | gaatgatttg  | gttttaatta  |    | 1020 |
| taaactgggg   | tctaaatcct   | aaagcaaaat  | tgaaactcca  | ggatgcaaaa  | tccagagtgg  |    | 1080 |
| cattttgcta   | ctctgtctca   | tgccttgata  | gctttccaaa  | atgaaagtta  | cttgaggcag  |    | 1140 |
| ctcttgggg    | tgaaaagttt   | tttgtacagt  | agagtaagat  | tattaggggt  | atgtctatac  |    | 1200 |
| gacaaaaggg   | gggtctttcc   | taaaaaagaa  | aacatgatgc  | ttcatttcta  | cttaatggaa  |    | 1260 |
| cttgcgttct   | gagggtcatt   | atggtacgt   | aatataaaagc | ttggatgatg  | ttcctgatta  |    | 1320 |
| tctgagaaac   | agatatagaa   | aaattgtgtc  | ggacttaaat  | aattttcggt  | gaacatgctg  |    | 1380 |
| ccataactta   | gattattctt   | ggtaaaaaaaa | taaaagtcac  | ttatttctaa  | ttcttaaaagt |    | 1440 |
| ttataatata   | tattaatata   | gctaaaattt  | tatgtaatca  | ataaaaaccac | tcttatgttt  |    | 1500 |
| attaaactat   | ggcttgcgtt   | tctagacaac  | ttcctaactc  | ccttctttt   | ctc         |    | 1553 |
| <210>        | 45           |             |             |             |             |    |      |
| <211>        | 723          |             |             |             |             |    |      |
| <212>        | DNA          |             |             |             |             |    |      |
| <213>        | Mus musculus |             |             |             |             |    |      |
| <400>        | 45           |             |             |             |             |    |      |
| aacgaccgc    | cttcctttga   | ggtgcctggg  | tggaactaga  | ggcgtaaaa   | agtcacggcg  |    | 60   |
| cgcaggcgt    | gttgctttct   | tatcggccta  | gtgcgccact  | tgacgcatgt  | gcagtagggc  |    | 120  |

Sequence Listing.txt

|             |             |            |             |            |             |     |
|-------------|-------------|------------|-------------|------------|-------------|-----|
| aatcgggcgt  | gcggttagctt | cttccttgtt | aggttccgga  | agagccgcgc | actccttggg  | 180 |
| cgttaagggt  | tcgcgcgcgc  | cagggtcggt | tcagccgagc  | acttggcgtc | ccctcgagct  | 240 |
| cgagatctgt  | gaacagccac  | catgtcgatc | ttcacccccca | ccaaccagat | ccgactgacc  | 300 |
| aatgtggccg  | tgggtgcggat | gaaggggga  | gggaagcgct  | tcgaaatcgc | ctgctataaaa | 360 |
| aacaaggctcg | tcggctggcg  | gagtggcgtg | tgagtaatcc  | tgtgcccaga | gttcggcggc  | 420 |
| ctggcctccc  | taacccccggc | tcctgcgacc | catcggtacc  | tttcaggcct | ggtttacccg  | 480 |
| attcggattt  | gtttctgctt  | tgggattttt | ttagtatcat  | aaaaactgcc | aactacaaac  | 540 |
| gccatcagag  | ccgggtggga  | ccgatggttt | aggcctgtaa  | tcccagcgcc | caggaaactg  | 600 |
| aggcaggagg  | attgctgcga  | tttccaggcc | agcctggAAC  | gtgtgtgtgt | gtgtatgtgt  | 660 |
| atgtgtgtgt  | tgtgtgtgtg  | tatgtgtatg | tgtgtgtgag  | agagaccgtg | accgaccctg  | 720 |
| tac         |             |            |             |            |             | 723 |

<210> 46

<211> 733

<212> DNA

<213> *Mus musculus*

<400> 46

|            |            |            |            |            |             |     |
|------------|------------|------------|------------|------------|-------------|-----|
| gtagtgtctt | cgctactgcc | atctagggac | agatattcca | ggacagaaga | aacaccactc  | 60  |
| cccaccacac | cctgagtttc | cttacataaa | acaatgatgt | agttttccc  | tctgtggta   | 120 |
| agtggagaa  | tccagatact | gtccttcgca | ggtagccacc | agagagagag | tgtggtgtgt  | 180 |
| gtgtgtgtga | gatttctctt | ttttttttc  | tttagggttt | ttgtttgtt  | ttttttgtt   | 240 |
| ttgtttggtt | ttttttttt  | tttttttga  | gactggcctc | aaactcccaa | tttccctgccc | 300 |
| tctgcctcct | aaatggtgag | ttacagatgt | gcacatcaca | cccagcttgc | agcacttgcc  | 360 |
| atttctcttg | ttgctatctt | gtgtttaat  | gtgagtgat  | tttcttacta | tccagtggat  | 420 |
| cacataggac | tttctctcct | gcccttcaa  | gggaaaaaga | ccttgatgaa | gttctgcaga  | 480 |
| cccattcagt | gtttgttaat | gtttccaaag | gtcaggttgc | caagaaggaa | gacctcatca  | 540 |
| gtgcatttgg | gacagacgac | cagactgaaa | tctgcaagca | ggtaggtcct | gccaggtgca  | 600 |
| atgtaacaaa | atctcacgat | ggtaggcaac | atctggacca | ctgtgtttac | tgtttttctt  | 660 |
| gatgagtttt | tgttgtttt  | gcatttgtt  | ggtccctccc | acctccagtt | tatattgttg  | 720 |
| ggcaatttgg | gga        |            |            |            |             | 733 |

<210> 47

## Sequence Listing.txt

<211> 912

<212> DNA

<213> Mus musculus

<400> 47  
tgtaagctgc tgctgggtta aggcagcacg tggttctgcg tgagcagctg cagtggacgc 60  
cgcccccctt cctccccgct acctaccgtg gcagtagaga gataccaga actgatgagg 120  
gctttctcta tggctgcca tcttagatt ttgactaaag gagaagttca agtgtcagat 180  
aaagaacggc acacacagct ggagcagatg tttagggata tcgccaccat tgtggcagac 240  
aagtgtgtga acccagaaac aaagagacct tacaccgtta tcctcatcga gagagccatg 300  
aaggacatcc actactccgt gaaacccaac aagagcacaa agcaacaggt aagggttcct 360  
tgggtcctc gggacctaag gccatggaag tgccctgatgc gcctgcctcc ctatctctgg 420  
tgctgggtc agcagcacac acttccaggc tgccctggctg tgctggtgct catcattctg 480  
agcagaccct ctcccggtg agccataaccc ttagctgctg ctcctcagtg tgacggaaca 540  
caaatacaca cagaactctt tttgtttgtt tggttggggg tttttttttt 600  
tttagtttgtt tttgggtctt tcgagacagg gtttctctgt attgcctgg ctgtcctgg 660  
actcgctctg tagcccgaggc tggcctcgaa ctcagaaatc cgcctgcctc tgccctccaa 720  
gtgctggat taaaggcgtg ggccaccaca cctggctcat acagaactct tatttcctgc 780  
ccagactcaaa cctttaaaga gaaagcttgg actttgagtc acctgagccc ttttgctgtt 840  
tgtgtttatt aacatatttc ctacagctca gccctgtcac gccagccatt ctgctggcct 900  
qgattccaag ca 912

<210> 48

<211> 1528

<212> DNA

<213> Mus musculus

48

|   |     |
|---|-----|
| ctcaaaagaa ataacaatgc gggtgtggtg gtgcacacct ttaatcccag cactcgggag | 60  |
| gcagaggcag gcgaatttct gagttggagg ccagcctgag ttccaggaca gccagggcta | 120 |
| tacagagaaa ccctgtctcg aaaaacccaa aaaaaaaaaa aaaaaaaaaa aagaaggaag | 180 |
| aaagaaaagaa agcaagcaag caagcaagcg agcaatggtg tttcacagca cgaagtata | 240 |
| tatqaccat ataactaaca qcctqcctqa qttattactq cttaqqcaqt qqccctqactt | 300 |

## Sequence Listing.txt

|   |      |
|---|------|
| agacctgatc atgtacgtcc agaaaaggcc tggtgaaaaa ctggaaggag ccagagaaga   | 360  |
| acctccatac acaagaactc tggcaacct cagaactact catgtccatt ccacaaccca    | 420  |
| accagggct tctctgtaca gggacaaggc acaggagagt catcaaggga ctaacgagct    | 480  |
| cacatcgacc acctgtgcac tgccccctc tccataaacc tcagattgca caagctcagc    | 540  |
| ccccgtctcc tccacatcca gctgccagtg actgacgctg cctgcgggtc agtggcagag   | 600  |
| gtgccaaggc aaaggcctgt gaggaccta ctgtgtatca ctaggcgtcc cagcactctg    | 660  |
| gatgactgtt attagacttt cagggaaagcc actagttctt ctacccagtg acagttctc   | 720  |
| aggcacgggt gtccacagag tggaaaggc cttgctggac ggctgggg aagctctgg       | 780  |
| ccattttccc aaggagcatg tctctgctct caccactgtt agaattactg tgaactcagc   | 840  |
| tatggctca ggtcctcaag gttcatggct taaaacaggg ttggcttaga agtctccgag    | 900  |
| gccaacaaaa agacattttg tctgttctag agatgtacga aattcccacc gcacacattt   | 960  |
| tcttgctttt agagagctga ggacagccca ggtcctcgat catgctgggt agttgcttca   | 1020 |
| ccactgaact gagtcccagc cttaacgtt gcttctgcc gaagcaaaaa ttatTTTTT      | 1080 |
| ttccatttca caaaatgaga cactagctca ttttttagt atttcttaga ttgctggtag    | 1140 |
| cttggctgta aaactgctgg cataaggcag ctatgtggaa actgctttgt tcatgtctaa   | 1200 |
| catataaaatt tgtcagcac aaaaactaag taacgagcac cccttgttct gtcttaaagg   | 1260 |
| ctttggaagt gataaaggcag ctgaaagaga agatgaagat agagcgggccc cacatgcgt  | 1320 |
| tgcgcTTcat cctgccagtg aacgaaggga agaagctgaa ggagaagctg aagccactga   | 1380 |
| tgaagggttgtt ggagagttag gactacagcc agcagctgga gatcgtaaga ttaggtggc  | 1440 |
| ggggagcagg tggcgccagcc aaggcccatt gattatgacc ttaacacatt attattcttgc | 1500 |
| gcttccttct acccaaatacg cctcgatc                                     | 1528 |

&lt;210&gt; 49

&lt;211&gt; 1440

&lt;212&gt; DNA

&lt;213&gt; Mus musculus

&lt;400&gt; 49

|  |     |
|--|-----|
| gtataactgtg gctgtttca gacacagcag aaggcatcg atccattac agatggttgt    | 60  |
| gagccacttg tggttgtgg gaattgagct cagaacctct ggaagagcag ccagtgcgtga  | 120 |
| gcatctctac agcctctgaa cccgggtctt gatgctaagc agtgcact ctcagtatga    | 180 |
| gctgcagcac tggccaggtg agtcttcaag ggtgtctta tcaggctttt actgctgtga   | 240 |
| acagacacca ggaccaatgc aagtcttata aagaacaaca ttttagtttag tctggcttac | 300 |

Sequence Listing.txt

|   |      |
|---|------|
| aggttcagag gttcagtcca ttatcaaggt gggagcatgg tagtatccag gtgggaatga   | 360  |
| tacaggaggg gctgagagtt cgacatcttc atctgaaggc tgcttagcaga atactgactt  | 420  |
| cgaggctgtt aggatgaggg tcttaaagcc tatgaccaca gggacacacc ttctaatagt   | 480  |
| gtcactcccc gggctgagca tatacaaacc gtaacacggg ataagtgcct ttcccaaagt   | 540  |
| ccaacagtag gtgcttagaa tcgagacaga acccccaggcc cagcctgctg ccctggcctc  | 600  |
| catgtgagca gcacctagaa cacagtata gatctgcct gagcattcaa actgggctta     | 660  |
| ttctgtgccg atgcccacatct tcccttgaa accagctgtg ttactcattg caggtgtgcc  | 720  |
| tcatcgaccc aggctgcttc agagaaattt atgagctaataaaaaaggaa acgaaaggca    | 780  |
| ggggttctct ggaagtgctc agtctgaagg acgtggagga aggcgatgag aagtttgaat   | 840  |
| gacaccgccc ggctcctcaa ctggagcacg accgaggacg cttgttcctc acagcagcag   | 900  |
| ctcgttctgt gacctgccaa acgcctgct cacgcgacgt gccactttcc atcttgtt      | 960  |
| aaacatttac ccaggtacacct gggtattttt gttgtcaatt ggggtttcca gcaaaaatga | 1020 |
| aaaataacct aaaatacaga gtccagaaca gctgctact gctgcgtctg cctttcttagt   | 1080 |
| tccaggggac cagagacagc attgggtggat aagaaggttag agttagtcca tgacagatca | 1140 |
| ttggagaggg gtctgaataa caaagggggt acgcctgctg gaaagaagat ggggttttc    | 1200 |
| tgaataatga agtgcaggtt tgggtgtga gcatggagag aagagttcct gggccctcc     | 1260 |
| caatagattt ataatgacta gggagaattt gactttctaa ttttcaacca acatgctacc   | 1320 |
| aaaactgact tagattattc ttgggaaaat atatacagtc atttaatact aattctaaa    | 1380 |
| ggtttataat atatgttagt atagttaaaa ttctatgtaa tcaataaaaac ttatTTTAC   | 1440 |

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